

Appl No.: 10/623,227

Reply to Office Action mailed August 01, 2007

Atty. Dkt. No:

UCF-273DIV.A

SUBSTITUTE RESPONSE

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claims 1 – 36 (Canceled).

Claim 37 (Currently Amended). Carbon particles having surface filaments, comprising in combination:

a plurality of carbon filaments that are approximately one micron in mean diameter, the carbon filaments produced solely from thermocatalytic decomposition of hydrocarbon fuel in the presence of carbon black catalyst;

a structure of loose curved elongated worm shaped filaments, with a portion of the structure being substantially hollow, and each of the loose curved elongated worm shaped filaments being substantially ~~[[eff]]~~ tubular, with longitudinal uniformity and graphitic structure; and

a hydrophobic property of oil film adsorption from a surface of water.

Claim 38 (Canceled).

Claim 39 (Previously Presented). The method of producing carbon particles having surface filaments of about one micron mean diameter, a structure of loose curved elongated worm shaped filaments, with a hollow portion, and each of the filaments having a tubular, longitudinal uniformity, of graphitic structure, consisting of:

a (1) passing electrical current through catalytic material that consists solely of a carbon-based material and;

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- a (2) heating the catalytic material consisting solely of a carbon-based material to about 850°C to about 1200°C;
- b) passing a stream of hydrocarbon fuel through the catalytic material consisting solely of a carbon-based material with production of hydrogen-rich gas and carbon with filamentary surface deposited on the surface of the catalytic material; and
- c) recovering carbon particles with a filamentary surface, wherein the carbon particles have surface filaments of about one micron mean diameter in a structure of loose curved elongated worm shaped filaments, with a hollow portion, and each of the filaments having a tubular, longitudinal uniformity, of graphitic structure[$\frac{1}{2}$].

Claim 40 (Canceled).

Claims 41 – 43 (Canceled).

Claim 44 (Previously Presented). The carbon particles of claim 37, wherein the plurality of carbon filaments are produced solely in the presence of carbon-based catalyst materials.

Claim 45 (Canceled).

Claim 46 (Previously Presented). The carbon particles of claim 44, wherein the carbon based materials are selected solely from carbon black (CB).

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Claim 47 (Previously Presented). The carbon particles of claim 44, wherein the plurality of carbon filaments form a loose, curved, elongated worm shaped structure.

Claim 48 (Previously Presented). The carbon particles of claim 47, wherein the structure consists of loose, curved, elongated worm shaped filaments, and wherein a portion of the filaments is hollow, tubular and longitudinally uniform.

Claims 49-50 (Canceled).

Claim 51 (Previously Presented). The carbon particles of claim 48, wherein the hydrophobic property includes:

a particle structure that functions as a sponge and readily adsorbs oil from a water surface.

Claims 52 – 54 (Canceled).

Claim 55 (Twice Previously Presented). The method of claim 39, wherein the catalytic material is solely the carbon black.

Claim 56 (Previously Presented). The method of claim 39, wherein the catalytic material consists of: solely activated charcoal.

Claims 57 – 61 (Canceled).